

MEXICAN MOLLUSKS COLLECTED FOR DR.  
BRYANT WALKER IN 1926, PART 3

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The first paper on this collection appeared as Occ. Papers Mus. Zool. Univ. Mich., no. 193, and contains (pp. 1-25) a detailed discussion of the localities and the symbols utilized for them. In the following descriptions of new species and subspecies, only the type locality is cited.

SPIRAXIS (PSEUDOSUBULINA) IRREGULARIS NEGLIGENS, new subspecies.

Shell subulate-turrite, greenish yellow to whitish, translucent, irregularly thread-costulate. Whorls  $11\frac{1}{4}$ , flattened, with prominent, quite simple suture. Apex narrowly rounded; embryonic whorls  $2\frac{1}{4}$ , quite rapidly widening, almost smooth except closely ribbed last whorl. Later whorls short, gradually increasing; first with 57 juxtaposed threads; second with 46 and third with 44, separated by subequal interspaces; remainder with low but sharply-marked threads which are quite irregularly spaced and often occur in pairs, separated by wide striate interspaces. Aperture small, ovate-quadrate, with longest dimension about  $40^\circ$  to long axis of shell; peristome inclined about  $15^\circ$ , weakly arcuate, quite simple. Columella concave, markedly truncate. Alt. 8.48 mm., diam. 28 (2.34 mm.), alt. last whorl 33 (2.84 mm.); aperture: alt. 20 (1.66 mm.), diam. 69 (1.15 mm.).

Necaxa, alt. 5000 ft. (AB, III, a, 34). This subspecies is much slenderer than typical *S. irregularis* (Pils.) from Texolo, V. C. A form with stouter middle whorls, which give the shell more convex outlines, occurs with *S. i. negligens* and approaches the typical form more closely. An example (AB, III, a, 41) measures: alt. 9.25, diam. 29 (2.68), alt. last whorl 34 (3.12); aperture: alt. 21 (1.96), diam. 68 (1.34); whorls 11.

S. (P.) VENTROSUS, new species.

Shell urocoptoid-turrite, greenish corneous, somewhat translucent, regularly and very closely thread-costulate. Whorls 11, flattened, with telescoped suture. Apex relatively small, rounded-ogival; embryonic whorls  $2\frac{1}{4}$ , of which last  $1\frac{1}{4}$  begin neanic sculpture. Later whorls short, more rapidly increasing near apex than towards base, with rather shallow suture; first with 52 low threads and slightly narrower interspaces, which show weak spiral striae; second with 59, third with 67, last with 92 threads that are consid-

erably wider than their interspaces and are weakly crested below suture. Aperture trapezoidal-lanceolate, oblique (long axis  $40^\circ$  to that of shell); peristome almost vertical and little arcuate. Columella concave, strongly but obliquely truncate. Alt. 12.69, diam. 27 (3.48), alt. last whorl 36 (4.62); aperture: alt. 23 (2.89), diam. 64 (1.85).

Tenango Hills, Necaxa, 4600 ft. (B, I, a, 41); one shell. *S. ventrosus* has early whorls like *S. texoloensis* but the later whorls are much broader and higher and have closer striae. It has a smaller apex and less oblique suture than *S. fortis* (Marts.).

*S. (P.) CADUCUS*, new species.

Shell subcylindric-turrite, very light corneous, almost ivory, lightly translucent, with thin, well spaced riblets. Whorls 12, markedly convex with deep, simple suture. Apex fairly large; embryonic whorls  $2\frac{1}{4}$ , quite rapidly widening; almost smooth except gradual assumption of neanic sculpture on last half-whorl. Later whorls fairly short, gradually widening; first with about 55 threads which are closely spaced at beginning; second and third with 43 to 44 narrower riblets and widening interspaces; last with 43 thin but quite high riblets which abruptly taper down towards suture and gradually fade away on base. Aperture small, quadrate-ovate, long axis about  $35^\circ$  to that of shell; peristome almost vertical (about  $10^\circ$  to shell-axis) and slightly arcuate. Columella markedly concave and abruptly truncate; columellar and parietal callus distinct and continuous. Alt. 9.86, diam. 25 (2.48), alt. last whorl 32 (3.12); aperture: alt. 19 (1.88), diam. 65 (1.23).

Las Tortolas, Córdoba (AD, III, a, 4). *S. caducus* resembles *S. borealis* (Pils.), but has more deeply impressed suture and more convex whorls. It appears to be the commonest *Pseudosubulina* around Córdoba. A stouter form, with less concave columella, that occurs with it, measures: alt. 9.28, diam. 27 (2.50), alt. last whorl 36 (3.36); aperture: alt. 21 (1.97), diam. 61 (1.21);  $10\frac{3}{4}$  whorls.

*S. (P.) COSTATUS*, new species.

Shell cylindric-turrite, imperforate, greenish white, translucent, costulate. Whorls about 8, flattened convex, with deep crenulate suture. Apex obtuse; embryonic whorls  $2\frac{1}{4}$ , rapidly widening, almost smooth (weakly punctate) but with fine striae appearing on last half-whorl. Later whorls gradually increasing, with heavy riblets, about as wide as interspaces, which are weakly and finely striate spirally; first with 30 ribs; last with only 20; last whorl convexly, gradually tapering with riblets weaker at basal end.

Aperture and peristome quite oblique (each about  $30^\circ$  to shell-axis), trapezoidal-ovate; palatal lip weakly arcuate, almost thickened; columella concave above, obliquely and rather weakly truncate. Alt. 3.81, diam. 29 (1.11), alt. last whorl 40 (1.51); aperture: alt. 23 (0.86), diam. 71 (0.61).

Atoyac (AD, I, a, 1), 1300 ft., infrequent. The convex whorls, oblique suture and quite oblique aperture of *S. costatus* distinguish it.

S. (P.) *ARCUATUS*, new species.

Shell subulate-turrite, imperforate, whitish, translucent, with irregular fine arcuate riblets. Apex narrowly rounded; embryonic whorls  $2\frac{3}{4}$ ; first 1.5 smoothish and remainder assuming close growth-threads. Later whorls short, gradually increasing, with fine closely spaced growth-threads, which become progressively weaker and more irregular and usually die out below greatest curvature of last whorl; first with 59 threads; second with 58; third with 52; fourth with 57 and last with 61. Aperture trapezoid with greatest dimension  $30^\circ$  to shell-axis; parietal callus thin but extensive; peristome almost vertical, noticeably arcuate. Columella almost straight, weakly and obliquely truncate. Alt. 4.02, diam. 30 (1.19), alt. last whorl 37 (1.49); aperture: alt. 23 (0.91), diam. 66 (0.60); 9 whorls.

Sumidero, about 3400 ft. (D, I, a, 6); very rare. The most striking features of *S. arcuatus* are its feeble, arcuate growth-threads.

S. (P.) *PARVUS*, new species.

Shell turrite, imperforate, silvery white, translucent, finely costulate. Whorls about  $7\frac{3}{4}$ , slightly flattened convex, with deep crenulate suture. Apex obtuse; embryonic whorls  $2\frac{1}{4}$ , rapidly widening, almost smooth (weakly punctate) but becoming closely thread-ribbed on last  $\frac{3}{4}$  whorls. Later whorls quite short, gradually increasing, with fine but prominent thread-riblets, much narrower than their interspaces and weaker basally; without distinct spiral striae; first and second with about 36 threads; last with 38. Aperture slightly oblique (about  $20^\circ$  to long axis of shell), broadly trapezoidal-ovate; peristome almost vertical but arcuate below periphery; columella slightly concave, obliquely and weakly truncate. Alt. 3.40, diam. 35 (1.18), alt. last whorl 42 (1.44); aperture: alt. 26 (0.88), diam. 66 (0.58).

Above Necaxa, alt. 5000 ft. (BC, III, a, 34); quite infrequent. *S. parvus* has similar growth sculpture to *S. linearis* (Pfr.), as figured by Strebel und Pfeffer, but the latter has much more oblique whorls and appears to have simpler columella.